

a second control conduit in a flow path between the pump and the at least one motive cylinder, the second control conduit being selectively isolatable from the first control conduit.

25. (New) A steering system, comprising:

a motive cylinder for applying a turning force to vehicle wheels;
a pump for conveying motive fluid to the motive cylinder;
at least one sensor configured to measure at least one operating characteristic of the steering system; and
a controller receiving information from the at least one sensor and adjusting performance of the vehicle in response thereto.

26. (New) A steering system, comprising:

a motive cylinder for applying a turning force to vehicle wheels;
a pump for conveying motive fluid to the motive cylinder; and
a controller electrically connected to the pump, the controller being programmed to control operation of the pump in response to signals received from at least a steering wheel torque sensor and a steering wheel absolute position sensor.

27. (New) A steering system comprising, comprising:

a motive cylinder for applying a turning force to vehicle wheels;
a pump for conveying motive fluid to the motive cylinder; and

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a controller electrically connected to the pump, the controller being programmed to determine a position of the vehicle wheels prior to applying the turning force.

28. (New) A steering system comprising, comprising:

a motive cylinder for applying a turning force to vehicle wheels;
an electric motor driven reciprocating piston pump for conveying motive fluid to the motive cylinder;
at least one sensor for measuring at least one operating characteristic of the vehicle; and
a controller electrically connected to the pump, the controller being programmed to control the electric motor in response to signals received from the at least one sensor.

29. (New) A power steering system for vehicle wheels,

a power cylinder having left and right ports and adapted to supply a powered assist to steering the vehicle wheels upon the supply of a pressurized fluid to one of the left and right ports,

a hydraulic cylinder assembly including
a cylinder having opposing first and second ends,
first and second ports respectively located proximate the first and second ends,

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at least one piston dividing the cylinder into a first and second variable volume chambers,

a linear drive screw engaging the at least one piston and extending lengthwise within the cylinder,

a servo motor coupled to the drive screw and configured to rotate the drive screw to reciprocate the at least one piston within the cylinder and thereby vary the volume of the two variable volume chambers such that when a volume of the first chamber is increased, a volume of the second chamber is reduced, and when a volume of the first chamber is reduced, a volume of the second chamber is increased,

and

a gear box coupled between the servo motor and the drive screw;

a primary applied steering torque sensor which generates a signal in response to an applied steering torque;

an electronic control means to which the primary applied steering torque sensor is operatively connected, and which controls actuation of the electric motor;

a first fluid line connecting the first port of the hydraulic cylinder assembly to the left port of the power cylinder; and

a second fluid line connecting the second port of the hydraulic cylinder assembly to the right port of the power cylinder;

wherein the electronic control means controls the powered assist to steering supplied by the power cylinder in dependence upon the signal.

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30. (New) The power steering system according to claim 29, wherein the servo motor is coupled to the cylinder.

31. (New) The power steering system according to claim 30, wherein the servo motor is coupled to one of the first and second ends the cylinder.

32. (New) The power steering system according to claim 30, wherein the hydraulic cylinder assembly further includes an encoder configured to send signals to the electronic control means indicative of a position of the at least one piston.

33. (New) The power steering system according to claim 32, wherein the encoder is a rotary-type encoder.

34. (New) The power steering system according to claim 32, wherein the encoder includes an emitter disk and a sensor and emitter module.

35. (New) The power steering system according to claim 32, wherein the servo motor is of the frameless, stepping type.

36. (New) The power steering system according to claim 35, wherein the servo motor includes permanent magnet rotors.

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